

## Claims

[c1] A device (200, 300, 400) for detecting the presence and type of trailer connected to a towing vehicle, said device comprising: means for applying a first voltage to a first amount of power lines (121, 122, 123, 124, 125) for a first sub system in the trailer and means for measuring the individual currents ( $i_1, i_2, i_3, i_4, i_5$ ) consumed by components (111, 112, 113, 114, 115) in said first sub system including means for comparing the level of said individual currents to a first predefined threshold; means for applying a second voltage (310; 311, 312, 313, 314, 315) to a second amount of power lines in the first sub system in the trailer; means (310) for measuring the total current in said second amount of power lines; and decision means for comparing the total current in the second amount of power lines to a second threshold and thereby determining at least one of (1) whether a trailer is present and (2) characteristics of a detected trailer.

[c2] The device as recited in claim 1, wherein the means for applying the second voltage is only activated when the individual current consumed by the components in the first sub system is below the level of said first predefined threshold.

[c3] The device as recited in claim 2, wherein the means for applying the second voltage applies said second voltage to each of the individual components in the first sub system.

[c4] The device as recited in claim 2, wherein the means for applying the second voltage applies said second voltage to at least one group of components in the sub system.

[c5] The device as recited in claim 1, wherein the application of the first voltage is also used as said second voltage, with the second amount of power lines being the total amount of power lines to the sub system.

[c6] The device as recited in claim 1, wherein the sub system is used is the light system of the trailer.

[c7] A method for detecting the presence and type of trailer connected to a towing

vehicle, said method comprising: applying a first voltage to a first amount of power lines for a first sub system in the trailer and measuring the individual currents consumed by components in said first sub system; comparing the level of said individual currents to a first predefined threshold; applying a second voltage to a second amount of power lines in the first sub system in the trailer; measuring the total current in said second amount of power lines; comparing the total current in the second amount of power lines to a second threshold; and determining at least one of (1) whether a trailer is present and (2) characteristics of a detected trailer, said determination being based on said measured currents.

- [c8] The method as recited in claim 7, wherein the second voltage is applied only when the individual current consumed by the components in the first sub system is below the level of said first predefined threshold.
- [c9] The method as recited in claim 8, wherein the second voltage is applied to each of the individual components in the sub system.
- [c10] The method as recited in claim 8, wherein the second voltage is applied to at least one group of components in the sub system.
- [c11] The method as recited in claim 8, wherein the first voltage is also used as said second voltage, with the second amount of power lines being the total amount of power lines to the sub system.